Preamble – General Commentary

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Section 1. Discussion and reply concerning all 35 USC § 102 Claims Rejections

All 35 USC § 102 claims rejections refer to Alles teaching claims of the present invention. Below I argue that the environment for Alles, and Alles' claims, are distinct from the present invention, and that Alles' claims and disclosures teach none of the claims of the present invention.

After a fuller consideration of Alles', it is clear that Alles' claims the automated provisioning of the bandwidth only for transmitted bandwidth through a trunk port (see Column 13, lines 62-67 describing what is comprised by the ISN:

> *"each of the plurality of processing rules including a classifier to identify a data flow and an action associated with the classifier to apply a bandwidth prioritization policy and a bandwidth allocation policy to packets associated with the data flow identified by the classifier,"*

together with Column 14, lines 5-7 describing further what is comprised by the ISN:

> *"a trunk port coupled to the switch fabric, the trunk port for transmitting any of the plurality of packets desired to be transmitted"*

The intended context of Alles' invention is described in the background of the invention section as addressing the inadequacy of conventional routers and remote access devices in meeting user requirements (see column 2, lines 44-52).

> *"In a conventional implementation, combination of routers and remote access devices may not serve particularized requirements (or desired service policies) of users. A group of users having specific service policy requirements will be referred to as a subscriber in the present application. Examples of particularized requirements of subscribers are first noted. Then, the inadequacy of conventional routers and remote access devices in meeting user requirements is described."*

Conventional routers operating in conventional environments involves routing packets over trunk communication links, and Alles' patent describes addressing particularized user requirements (desired service policies) by provisioning the trunk bandwidth over such conventional architectures – see any of many references throughout Alles' patent:

Figure 1
Figure 3
Column 1, lines 53-63
Column 1 line 64 to column 2, line 3
Column 2, lines 7 to 25, lines 36-43, lines 48-54, and lines 59-63
Column 3, lines 14-20, lines 34-36, lines 47-52, lines 58-65
Column 4, lines 7-13, lines 50-64
Column 5, lines 4-67
Column 6, lines 1-15, lines 22-31, lines 48-51, lines 65-66
Column 7, lines 9-34, lines 51-61
Column 7, line 64 to column 8, line 3
Column 8, lines 6-9, lines 18-21
Column 8, line 64 to column 9, line 2
Column 9, lines 30-37, lines 40-58
Column 9, line 67 to column 10, line 16
Column 10, lines 40-65
Column 11, lines 4-6, lines 29-31, lines 52-56
Column 12, lines 1-4, lines 33-38, lines 41-50, lines 52-58
Column 13, lines 5-34, lines 43-46, lines 58-67
Column 14, lines 5-18, lines 23-28, lines 32-37
Column 14, lines 53 to column 15, line 24
Column 16, lines 5-12

Throughout Alles' patent the diagrams, discussions and claims all consistently indicate that the bandwidth to be provisioned by the ISN is the bandwidth transmitted via the ISN's trunk port coupled to the switch fabric, with the trunk port transmitting any of the plurality of packets desired to be transmitted (see any and all references above).

So Alles provides the ability to shape conventional trunk line traffic (provision trunk bandwidth) on a subscriber-by-subscriber basis – thus enabling the enforcement of subscriber service level agreements. Conventional bandwidth service policy implementations are not able to differentiate the services of individual subscribers (according to Alles).

The need to enable enforcement of subscriber service level agreements in the Internet (or similar networks) stems from the nature of the traffic-sensitive packet-switched Internet network architecture, whose trunk paths are typically engineered to operate at no greater than 80% of their bandwidth capacity (i.e., when the 80% trunk utilization threshold is reach, additional trunk capacity is typically brought on ... at additional expense).

Managing trunk bandwidth is an issue of persistently increasing importance, because Internet traffic has grown and continues to grow persistently year over year with novel applications, and Internet service providers must leverage efficiency tools permitting them to cost-effectively manage the ever-rising onslaught of user-generated traffic. As example of the new traffic-generating applications, P2P traffic is one of the most challenging issues for Internet service providers to deal with today.

To provide further context to understand the unique importance of automated trunk bandwidth provisioning in the Internet, consider instead the telephone network. In contrast to the traffic-sensitive packet-switched Internet, the telephone network (over which the Internet has been largely built) and its circuit switched trunk traffic is very well-behaved. Consequently, there has been little need for implementing service policies to prioritize or provision telephony trunk bandwidth. For the telephone network, service level agreements (and telephone network traffic) are already managed by call signaling and setup procedures, calling statistics (Erlang) and call charges – obviating any need for additional systems to further enforce access service policies.

Summarizing, Alles' patent simply and consistently reflects the important economic and performance considerations related to an Internet service provider's (ISP's) ability and need to efficiently provision and utilize trunk bandwidth – in conventional ISP network architectures. This is the focus of the Alles patent.

In contrast, a key innovation of the present invention, is the provisioning of a non-trunk aggregated (multiplexed) wireless data stream, i.e. non-trunk bandwidth.

Alles' innovation of provisioning trunking bandwidth is not equivalent to the present innovation's provisioning of non-trunking bandwidth.

The innovation in the present invention is of a system that enables the provisioned use of one (or more) non-trunk aggregated wireless data-streams; which system is beyond the scope of topologies and modalities of conventional systems (including of the systems disclosed by Alles'), as described further below.

Hence, Alles' disclosures and claims regarding a system and method that provisions conventional trunk bandwidth does not teach any of the claims of the present invention – whose claims are of a system and method that provisions non-conventional, non-trunk bandwidth in the context (and environment) of an innovative and non-conventional architecture.

Further reinforcing the distance between the present invention from Alles, Alles specifies an example environment (beginning at column 6, line 32)) in which Alles' addresses the breadth of applicability of Alles' invention (see column 6, line 65 to column 7, line 5):

> *"It should be understood that the interfaces and subscriber locations of FIG. 1 are merely examples. ISN 150 may interface with different subscriber locations using different media and technologies without departing from the scope and*

spirit of the present invention as will be apparent to one skilled in the relevant arts. Such other implementations are contemplated to be within the scope and spirit of the present invention."

From Alles' explicit disclosure above – that the environment and interfaces shown in the figure provided are merely examples – it is clear that the invention contemplates any number of conventional environments and interfaces for the ISN. In Alles' conclusion, the range of potential embodiments (including environments and interfaces) is further described to not be limited to the embodiments described (all described embodiments were conventional environments). Instead Alles describes that the range of potential embodiments is limited by Alles' patent claims (see column 13, lines 35-42, that introduces Alles' claims):

"While various embodiments of the present invention have been described above, it should be understood that they have been presented by way of example only, and not limitation. Thus, the breadth and scope of the present invention should not be limited by any of the above-described embodiments, but should be defined only in accordance with the following claims and their equivalents."

And Alles' claims clearly limit applicability of Alles' patent to the provisioning of trunk bandwidth as detailed in claim 1 which defines an internet service node to include:

"each of the plurality of processing rules including a classifier to identify a data flow and an action associated with the classifier to apply a bandwidth prioritization policy and a bandwidth allocation policy to packets associated with the data flow identified by the classifier,"

and:

"a trunk port coupled to the switch fabric, the trunk port for transmitting any of the plurality of packets desired to be transmitted"

where clearly the former (bandwidth prioritization and allocation policies) can only prioritize bandwidth transmitted from the ISN, and Alles' claims only specify transmissions from the ISN over a trunk port. I.e., the bandwidth provisioning applies exclusively to the bandwidth resource of an ISN trunk port.

In further support of the position that Alles' bandwidth provisioning is different from that of the present invention because Alles' only provisions trunk bandwidth while the present invention provisions non-trunk bandwidth, note that Alles' also describes the traditional aspect of automatically provisioned trunk lines of conventional architectures, where the trunk lines are not so contended for that the ability of the system and network to meet one subscriber's service policies is not generally limited or hindered by the system's and network's simultaneous meeting of another subscriber's service policies (see column 3, lines 58-60):

"The present invention enables multiple subscribers to share the same ISN as the service policies of one subscriber may not generally affect the other subscribers."

Such a *separability* characteristic – which is generally true for conventionally-architected networks – is not true in the architecture of the present invention, in which wireless non-trunking bandwidth is anticipated to be highly over-subscribed – reinforcing the different, unique and innovative character of the present invention's different environment for bandwidth provisioning (a novelty apparently not contemplated, and also not taught, by Alles').

In the example of geostationary wireless satellite non-trunking bandwidth, the roughly 400 commercial geostationary communications satellites on-orbit today totals only about 400 satellites times 1 to 2 Gbps per satellite, represent a worldwide bit rate capacity on satellite bandwidth of less than 1 Tbps, which contrasts to the capacity of merely a single backbone cable which today is already in the multi-Tbps range. Consequently, there is and will continue to be a much stronger contention for satellite (and other wireless dissemination) bandwidth.

In yet further support of the difference between the present invention and Alles, Alles' orientation towards applications over the trunk bandwidth is described to comprise (conventional) two-way connections and conversations (see column 5, lines 45-67):

"Each typical remote access application requires a connection containing data flows in at least two directions. A data flow commonly refers to a sequence of IP packets from a source system to a destination system for supporting an application. In the IP environment, applications are typically identified by TCP or UDP ports, which are generally pre-specified or negotiated to identify the relationship with an application. Source and destination port numbers are typically used. The protocol type (TCP, UDP or ICMP), the port numbers along with the source and destination IP addresses, define an IP flow.

Some application-specific sessions employ more than the two flows, and possibly multiple connections. All flows related to an application session define a conversation. In IP environment, conversations are generally implemented on top of TCP (transmission control protocol), UDP (user datagram protocol), and ICMP (Internet control message protocol) protocols as is well known in the relevant arts. A conversation may contain multiple data flows depending on the application. For example, applications such as file transfer protocol (FTP) and RealAudio employ multiple flows, some times using a combination of higher layers (e.g., TCP vs. UDP in the IP fields)."

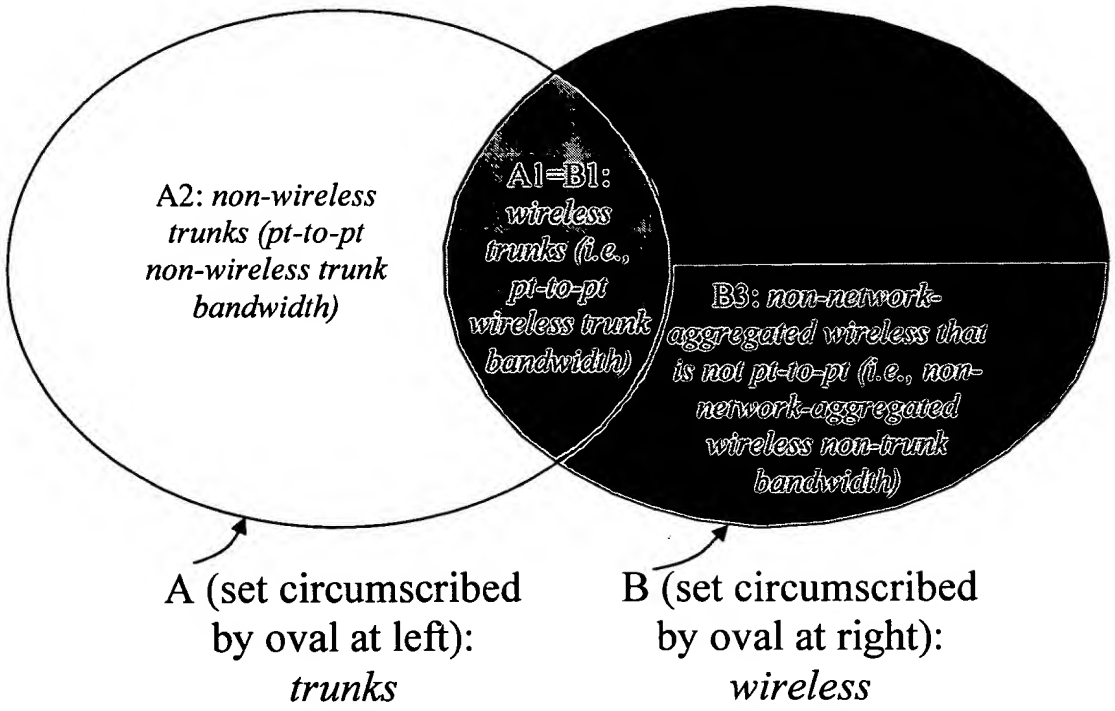
Again, this contrasts with the system and methods of the present invention in which the non-trunk wireless resource contended for is anticipated to be desirable for its ability to efficiently disseminate data without connections, and one-way to multiple users simultaneously – not two-way nor in connections or conversations over the provisioned

non-trunk wireless resource, as is done in conventional systems (and as is done in the environmental context of Alles).

The following Venn diagram clearly exhibits the differences between systems that automatically provision trunk bandwidth vs. those that automatically provision non-trunk bandwidth. This Venn diagram also further illustrates some elements of the novelty of the present invention with its non-trunk bandwidth provisioning.

Set A is the set of wireless and non-wireless trunks (a term of art in telecommunications used to connote pt.-to-pt. wireless links). Alles' provisioned bandwidth and the environment of that bandwidth falls in Set A: trunk ports transmitting from the ISN onto trunks (typically Internet trunks).

In some instances, those trunks can be wired trunks (Set A1), and in other instances wireless (Set A2). Geosynchronous satellites are sometimes used for such wireless Internet trunks, and the provisioning of such (trunking) satellite bandwidth can be done according to Alles' innovations, but that is not (never was) what is intended to be claimed in the present invention. If this requires clarifying in the claims of the present invention, I would be happy to do this (I am not currently aware that any such clarification is required).



To fully understand the diagram, consider the other oval, Set B, of wireless bandwidth. Set B1, wireless trunk bandwidth, is the same as Set A1, and both are subsets of both sets Set A (trunk) and Set B (wireless) – because they represent the intersection between wireless and trunk sets.

The complementary subsets of Set B – Set B2 and Set B3 – represent the novel and conventional non-trunk (often, broadcast) wireless bandwidth environments. Traditional wireless broadcast generally involves the programming of a licensed broadcast channel within (non-trunk) scarce broadcast-assigned spectral bandwidth. That conventional broadcast channels are typically pre-programmed in this way is what is meant by "non-network aggregated." A new, and subtle, application of scarce non-trunk broadcast-assigned spectral bandwidth is the topic of the present invention, in which that non-trunk broadcast-assigned spectral bandwidth is automatically provisioned according to the claims of the present invention.

The subtle, yet economically compelling, objective for doing this is most easily seen in the instance of claim 12 (of the present invention), which then permits an alternative network of storage and bandwidth to the Internet. Key economic properties of such an alternative network were described in my August 1, 2007, reply to the USPTO, showing a far lower network cost for an equivalent network workload.

The key to achieving such a novel network economy is a subtle (some have said very clever) role reversal of storage and bandwidth in the network. The Internet typically stores just one or a few times and transmits many, many, many times. The embodiment of the present invention discussed in my patent application transmits just one or a few times and stores many, many, many times.

While such a proposed architecture may require very high-capacity storage, this is increasingly possible due to the persistent year over year reduction in storage costs – a dynamic which I believe has not been widely seen together with seeing the novel bandwidth-storage role reversal, which together present a novel new architecture.

An additional novel feature of the present invention (that was also discussed in my August 1, 2007, reply to the USPTO) is that non-trunk wireless bandwidth is the most economic (and so preferential) bandwidth for the bandwidth-storage role-reversed architecture.

In addition, content access from mobile devices benefits from this bandwidth-storage role-reversal, since mobile units desiring to be network connected can now benefit from two aspect of wireless bandwidth: 1) the economy of non-trunk wireless bandwidth in a bandwidth-storage role-reversed network, and 2) the mobile feature associated with some wireless frequencies.

By drawing out these distinctions – especially by revealing Alles' particularization to trunk bandwidth provisioning – we see clearly that Alles' system and method of bandwidth provisioning is of trunk bandwidth in a conventional system with trunks

(typically two-way and connection-oriented), whereas the present invention's system and method provisions bandwidth in a novel environment of a non-trunk, one-way, not connection-oriented, wireless data-stream.

Since it is possible to show clearly that the present invention is not taught by Alles' by showing the difference between Alles' claims and the claims of the present invention – I now believe there is no need to bring claim 12 to an earlier position in the claims, as I had suggested in a facsimile correspondence on April 14, 2008.

Claims Rejections – 35 USC § 102

2. Claims 1-3, and 6-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Alles et al. U.S. Patent No. 6,466,976 (referred to hereafter as Alles).

As to claim 1, Alles teaches an automated negotiation and provisioning method for broadcast or other communication or storage resources or a system incorporation such resources, in which content is admitted to the individual resources or system, and/or managed within the system via an automated negotiation and provisioning system manager (computer) that allocates resources or directs system operation, comprising the iterated steps of:

Inputting into a computer the rules for admission to and/or use of the resources and/or system (see col. 4 lines 42-59 Alles discloses customized service policies to be provided to users),

[begin Page 3]

outputting from the computer a summary of the rules (see col. 12 lines 18-32 and fig 5A, Alles discloses different policy rules),

inputting into the computer offered terms for admission or use by prospective users of the resource or system (see col. 12 lines 24-38, Alles discloses the policy rules for subscribers),

outputting from the computer intermediate determinations and/or final binding terms for successful offers (see col. 12 lines 39-58, Alles discloses rule parameters that are readily available up front)

I respectfully disagree that Alles teaches claim 1 (please see my argument in Section 1 above, Alles' disclosure of customized service policies to be provided to users, disclosure of different policy rules, disclosure of the policy rules for subscribers, and disclosure of rule parameters that are readily available up front are all in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

As to claim 2, Alles teaches the method of claim 1, with an additional iterated step of: outputting from the computer command signals to resource or system controllers or other system elements that reflect binding determinations from the automated negotiation and

allocation process (see col. 12 lines 39-67, Alless discloses rule parameters that are readily available up front and the IP address generated).

I respectfully disagree that Alles teaches claim 2, or that Alles teaches the method of claim 1, with an additional iterated step of: outputting from the computer command signals to resource or system controllers or other system elements that reflect binding determinations from the automated negotiation and allocation process (please see my argument in Section 1 above, Alles' disclosure of rule parameters that are readily available up front and the IP address generated is in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

As to claim 3, Alles teaches the method of claim 1, with an additional iterated step of; inputting into the computer telemetry (or other automated or manual observations) to be used in the rules (see col. 13 lines 1-7).

I respectfully disagree that Alles teaches claim 3, or that Alles teaches the method of claim 1, with an additional iterated step of; inputting into the computer telemetry (or other automated or manual observations) to be used in the rules (please see my argument in Section 1 above, Alles' disclosures are all in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

As to claim 6, Alles teaches the method of claim 1, in which some of the content admitted to the system or controlled by the system is encrypted in order to permit selective access to the content solely by one or another subset of system receivers intended to receive that content (see col. 12 lines 24-32, Alles discloses data encryption using encryption protocol).

I respectfully disagree that Alles teaches claim 6, or that Alles teaches the method of claim 1, in which some of the content admitted to the system or controlled by the system is encrypted in order to permit selective access to the content solely by one or another subset of system receivers intended to receive that content (please see my argument in Section 1 above, Alles' disclosure of data encryption using encryption protocol is in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

[begin Page 4]

As to claim 7, Alles teaches the method of claim 1, in which a parameter representing some number of real or hypothetical receivers is used in the rules (see col. 3 line 6-13, Alles discloses that ISN may be used for serving a large number of subscribers).

I respectfully disagree that Alles teaches claim 7, or that Alles teaches the method of claim 1, in which a parameter representing some number of real or hypothetical receivers is used in the rules (please see my argument in Section 1 above, Alles' disclosure that

ISN may be used for serving a large number of subscribers is in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

As to claim 8, Alles teaches the method of claim 1, in which a guide is used to simplify identification of content traversing the resource or system or resources, such guide providing custom-tailored views of content schedules or repositories permissible to be viewed by a given viewer and either communicated over the resource, system resources, or the Internet (or alternative dedicated or dial-up or virtual data transmission circuits) (see col. 3 lines 16-22, Alles discloses the unique identification of the flow).

I respectfully disagree that Alles teaches claim 8, or that Alles teaches the method of claim 1, in which a guide is used to simplify identification of content traversing the resource or system or resources, such guide providing custom-tailored views of content schedules or repositories permissible to be viewed by a given viewer and either communicated over the resource, system resources, or the Internet (please see my argument in Section 1 above, Alles' disclosure of the unique identification of the flow is in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

As to claim 9, Alles teaches the method of claim 1, in which a guide is used to communicate the status of the rules-based procedure including showing availability of capacity and status of resources and negotiations, such guide being communicated over the resource, system resources, or the Internet (or alternative dedicated or dial-up or virtual data transmission circuits) to system users (see col. 8 lines 11-37, Alles discloses negotiation between two end system and the port information contained in the packets).

I respectfully disagree that Alles teaches claim 9, or that Alles teaches the method of claim 1, in which a guide is used to communicate the status of the rules-based procedure including showing availability of capacity and status of resources and negotiations, such guide being communicated over the resource, system resources, or the Internet (or alternative dedicated or dial-up or virtual data transmission circuits) to system users (please see my argument in Section 1 above, Alles' disclosure of negotiation between two end system and the port information contained in the packets is in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

As to claim 10, Alles teaches the method of claim 1, in which the content, terms of offers, and other aspects of resource and/or system operation are categorized for rules-processing, allocation, control, and guide purposes according to sets of parameters associated with a plurality of templates, each template including a certain

[begin Page 5]

set of parameters (see col. 7 line 51 – col. 8 line 3, Alles discloses the aggregate bandwidth which can be used by a subscriber).

I respectfully disagree that Alles teaches claim 10, or that Alles teaches the method of claim 1, in which the content, terms of offers, and other aspects of resource and/or system operation are categorized for rules-processing, allocation, control, and guide purposes according to sets of parameters associated with a plurality of templates, each template including a certain set of parameters (please see my argument in Section 1 above, Alles' disclosure of the aggregate bandwidth which can be used by a subscriber is in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

As to claim 11, Alles teaches the method of claim 10, in which the parameters include one or more of the following: temporal parameters, start time, duraction, maximum acceptable jitter, periodicity, number of instances rate parameters, minimum bit rate, maximum bit rate, average bit rate, conditional minimum bit rate, contidional maximum bit rate, second or third moments of the bit rate, periodic first, second, or third moements of the bit rate, acceptable probability of of rate adaptation, decode buffer status, volume of data, interest area, price to prospective content users or viewrs, and other rules of access for prospective users or viewers (see col. 2 lines 55-63, Alles discloses the service policy treatment according to data bits at certain time of the day).

I respectfully disagree that Alles teaches claim 11, or that Alles teaches the method of claim 10, in which the parameters include one or more of the following: temporal parameters, start time, duration, maximum acceptable jitter, periodicity, number of instances rate parameters, minimum bit rate, maximum bit rate, average bit rate, conditional minimum bit rate, conditional maximum bit rate, second or third moments of the bit rate, periodic first, second, or third moments of the bit rate, acceptable probability of rate adaptation, decode buffer status, volume of data, interest area, price to prospective content users or views, and other rules of access for prospective users or viewers (please see my argument in Section 1 above, Alles' disclosing of the service policy treatment according to data bits at certain time of the day is in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

As to claim 12, Alles teaches the method of claims 1, in which a cache is used to selectively store content received over a broadcast or communication system resource (see col. 12 line 24-31, Alles discloses storing of the cell).

I respectfully disagree that Alles teaches claim 12, or that Alles teaches the method of claims 1, in which a cache is used to selectively store content received over a broadcast or communication system resource (please see my argument in Section 1 above, Alles' storing of the cell is in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

Further indication of Alle's intent with respect to storing in Alles is found at:
- Column 7, lines 52-60 discusses buffer prioritization which indicates the different intention in Alles vs. the present invention, as regards the functionality of any storage

provisioning. Alles' actually does not claim provisioning of the buffer, but discusses that. The relevant point here is that Alles' use of RAM storage is both characteristically different than the utilization scenario in the present invention (as is discussed elsewhere in this document) and that Alles' does not teach anything about automated provisioning of storage in the context of the present invention – in which the storage is downstream of the non-trunk wireless dissemination bandwidth.

> *"The service policies may specify, for example, the aggregate bandwidth which can be used by a subscriber or some of the systems used by the subscriber, firewall parameters (which applicationslIP addresses are permitted out/in), security (anti-spoofing, virtual private network with encryption and tunneling) for specified conversations, priority in usage of buffer and bandWidth (e.g., higher priority to interactive applications such as telenet), traffic steering, etc."*

- Column 11, lines 24-29 contains Alles' further description of how the RAM is envisioned to be used – in order to facilitate the processing of packets in the packet service card (which is of an entirely different character than the role of storage/caching in the present invention).

> *"PIP 430 receives cells from switch fabric 340 and stores the cells in random access memory (RAM) 440. RAM 440 generally needs to permit fast access, and is implemented as SyncSRAM of 16 MB in an embodiment. PIF 430 strips cell header from the cells and provides the cell data in the form of a packet to one of the four processor groups 450."*

As to claim 13, Alles teaches the method of claim 12, in which the content admitted to the cache is decrypted (if it had been encrypted) and then re-encrypted (or encrypted for the first time) for controlling access of the content as it is used from the cache (see col. 12 lines 24-28, Alles discloses the encryption of data).

I respectfully disagree that Alles teaches claim 13, or that Alles teaches the method of claim 12, in which the content admitted to the cache is decrypted (if it had been encrypted) and then re-encrypted (or encrypted for the first time) for controlling access of the content as it is used from the cache (please see my argument in Section 1 above, Alles' disclosure of the encryption of data is in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

As to claim 14, Alles teaches the method of claim 12, in which the cache is positioned directly downstream of a broadcast receiver and position directly downstream of the cache is a high-bandwidth localized computer network (see col. 13

[begin Page 6]

lines 1-15, Alles disloses allocation of bandwidth to different connection sharing available bandwidth).

I respectfully disagree that Alles teaches claim 14, or that Alles teaches the method of claim 12, in which the cache is positioned directly downstream of a broadcast receiver and position directly downstream of the cache is a high-bandwidth localized computer network (please see my argument in Section 1 above, Alles' disclosure of allocation of bandwidth to different connection sharing available bandwidth is in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

As to claim 15, Alles teaches the method in which the inputting and outputting take place on different computers connected via a network (see col. 6 lines 43-51 and fig. 1 Alles discloses a network with multiple users).

I respectfully disagree that Alles teaches claim 15, or that Alles teaches the method in which the inputting and outputting take place on different computers connected via a network (please see my argument in Section 1 above, Alles' disclosure of a network with multiple users is in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

As to claim 16, Alles teaches the method in which the inputs derive from either real-time elections or agent-actuated elections according to preset condition-based elections (col. 4 lines 43-56 Alles discloses the rules of service).

I respectfully disagree that Alles teaches claim 16, or that Alles teaches the method in which the inputs derive from either real-time elections or agent-actuated elections according to preset condition-based elections (please see my argument in Section 1 above, Alles' disclosure of the rules of service is in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

As to claim 17, Alles teaches the method in which some or all of the steps are recorded and reported to cooperative billing, conditional access, or other cooperative process or system (see col. 4 lines 57-59).

I respectfully disagree that Alles teaches claim 17, or that Alles teaches the method in which some or all of the steps are recorded and reported to cooperative billing, conditional access, or other cooperative process or system (please see my argument in Section 1 above, Alles' disclosures are all in the context of an environment where the object of the provisioning is trunk bandwidth, not non-trunk bandwidth as in the present invention).

Claim 19 is rejected under 35 U.S.C. 102(e) as being anticipated by Dinoodie U.S. Patent No. 6,415,269 (referred to hereafter as Dinwoodie).

As to claim 19, Dinwoodie teaches a method for aggregating system users into a communications neighborhood, community or other focal area comprising: using

multiple access sharing techniques (such as TDMA, SDMA, CDMA, FDMA, a combination thereof, or other multiple access technique) for sharing a communications channel (see col. 5 lines 38-45, Dinwoodie discloses a predetermined time for each participant to place a bid);

In which the communication channel provides connectivity to a plurality of receivers, each of which may use the communications channel for internal communication, communication with partners, communication with suppliers, communication with

[begin Page 7]

customers, or other entity (see col. 3 line 66 – col. 4 line 7, Dinwoodie discloses communication paths between remote locations and acution site).

I respectfully disagree that Dinwoodie teaches claim 19, or that Dinwoodie teaches a method for aggregating system users into a communications neighborhood, community or other focal area comprising: using multiple access sharing techniques (such as TDMA, SDMA, CDMA, FDMA, a combination thereof, or other multiple access technique) for sharing a communications channel;

In which the communication channel provides connectivity to a plurality of receivers, each of which may use the communications channel for internal communication, communication with partners, communication with suppliers, communication with customers, or other entity. Dinwoodie does not discuss a communications neighborhood. A communications neighborhood – in the context of wireless satellite communications, e.g., involves the plurality of transponder units available at a given orbital slot all being occupied with complementary content or application types. A common example is the DirecTV orbital slot, which attains value not merely because it offers a single transponder of a certain type of news, entertainment or educational content, but because it offers a plurality of such content all from a single orbital slot – which consequently permits all of these channels to be received from the same receive antenna. The neighborhood concept is a term of art familiar to those in the satellite industry. Dinwoodie has not addressed this neighborhood concept at all in his patent. And Dinwoodie's reliance on satellite communications is merely as an enabler for remote auctions.

Claims Rejections – 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole should have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 4, 5, 18, and 20-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alles and further in view of Dinwoodie U.S. Patenet No. 6,415,260 (referred to hereafter as Dinwoodie).

As to claim 4, Alles fails to teach the method in which the resource or system of resources includes a geo-synchronous satellite, however, Dinwoodie teaches the method in which the resource or system of resources includes a geo-synchronous satellite (see col. 3 line 6-17, Dinwoodie discloses a network that include satellite communications system)

It would have been obvious to one of the ordinary skill in the art to incorporate the geo-synchronous satellite in Alles because doing so would enable the participation of prospect bidders at remote location.

I respectfully disagree that Alles or Dinwoodie teach claim 4, or that Dinwoodie teaches the method in which the resource or system of resources includes a geo-synchronous satellite in the context of the associated claims on which claim 4 is dependent.

Again, Dinwoodie's reliance on satellite communications is merely as an enabler for remote auctions; whereas in the present invention satellites (or other non-trunk wireless bandwidth) are one of several key elements of a novel network topology. Dinwoodie does not envision any auctioning of satellite bandwidth, nor does Dinwoodie construct the elements of non-trunk wireless bandwidth, automatic negotiation and provision, and storage in any manner that indicates Dinwoodie conceived such a novel architecture.

In particular, Dinwoodie does not teach the method in which the resource or system of resources (that is bid on, or that is subject to automated negotiation for provisioning) includes a geo-synchronous satellite.

A comment here is made to further reinforce the conclusion that Alles in no way teaches the present invention: In the paragraphs above, the examiner states, "Alles fails to teach the method in which the resource or system of resources includes a geo-synchronous satellite." This is true. More generally, it is true that Alles fails to teach the method in which the resource or system of resources includes a non-trunk wireless bandwidth

element (satellite or terrestrial wireless). Because the novel idea underlying the present invention requires such non-trunk wireless bandwidth element, Alles has clearly failed to teach the present invention.

Whether or not anyone with ordinary skill in the art would see Dinwoodie's remote bidding as useful to bid for bandwidth prioritization of trunk bandwidth as in Alles bandwidth-provisioning ISN is not relevant to the present invention, because the combination of Alles and Dinwoodie still does not provide for a geo-synchronous satellite (or a non-trunk wireless bandwidth system) whose broadcast stream bandwidth is the subject of negotiation and provisioning.

The key innovative use of the geo-synchronous satellite in the present invention is so that one can provide for a geo-synchronous satellite whose broadcast stream bandwidth is both directed to multiple recipients and is also the subject of the negotiation and provisioning (more generally, a wireless broadcast resource whose broadcast stream bandwidth is both directed to multiple recipients and is also the subject of the negotiation and provisioning) which was not the objective for the use of the satellite in Dinwoodie, nor – as examiner has acknowledged – does Alles teach any method involving a geo-synchronous satellite. Nor, by the way, does Alles teach any method involving any other type of non-trunk wireless transmission (such as wireless broadcasting of any type). But automated provisioning of non-trunk wireless bandwidth is key to the present invention, and Alles and Dinwoodie both fail to teach that, individually or collectively.

[being Page 8]

As to claim 5, Dinwoodie teaches a terrestrial-based wireless transport (see col. 3, lines 6-17).

I respectfully disagree that Dinwoodie teaches claim 5, or that Dinwoodie teaches a terrestrial-based wireless transport in the context of the associated claims on which claim 5 is dependent.

The same argument as is made above for claim 4 is applicable here – claim 5 is dependent on claim 1 (i.e., the wireless transport is used in the special context of claim 1, which is not taught by either Alles or Dinwoodie, nor implied by their combination).

As to claim 18, Alles does not teach the method in which a transaction is effected either creating automatic charges or debits to an account or initiating an instant transfer of funds, however Dinwoodie teaches the method in which a transaction is effected either creating automatic charges or debits to an account or initiating an instant transfer of funds (see col. 6, lines 51-60, Dinwoodie discloses the capabilities of receiving bids from participants having multi-cultures, languages and currencies) (see col. 6, lines 51-60, Dinwoodie discloses the capabilities of receiving bids from participants having multi-cultures, languages and currencies). It would have been obvious to one of the ordinary skill in the art to incorporate creating automatic charges or debits to an account to insure the transfer of funds in case the bid is accepted.

I respectfully disagree that Dinwoodie teaches claim 18, or that Dinwoodie teaches the method in which a transaction is effected either creating automatic charges or debits to an account or initiating an instant transfer of funds in the context of the associated claims on which claim 18 is dependent.

The same argument as is made above for claim 4 is applicable here – claim 18 is dependent on claim 1 (i.e., the transactional processes are presented in the special context of claim 1, which is not taught by either Alles or Dinwoodie, nor implied by their combination).

As to claim 20 Dinwoodie teaches the method in which the rules for admission or control aim to maximize some objective, such as: the unit price for some commodity measure, the total number of users, or total revenue (see col. 5 lines 12-17, Dinwoodie discloses the generation of bid by pressing the pound "#" symbol key on keypad).

I respectfully disagree that Dinwoodie teaches claim 20, or that Dinwoodie teaches the method in which the rules for admission or control aim to maximize some objective, such as: the unit price for some commodity measure, the total number of users, or total revenue in the context of the associated claims on which claim 20 is dependent.

The same argument as is made above for claim 4 is applicable here – claim 20 is dependent on claim 1 (i.e., the transactional processes are presented in the special context of claim 1, which is not taught by either Alles or Dinwoodie, nor implied by their combination).

As to claim 21, Dinwoodie teaches the method in which the rules involve one of a number of auction structures, such as: sealed bid auction, first price auction, discriminatory auction (Vickrey auction), uniform price auction, open bid auction, English auction, Dutch auction, all-pay auction, or common value auction (see col. 5 lines 10-21 Dinwoodie discloses the beginning of accepting bids).

I respectfully disagree that Dinwoodie teaches claim 21, or that Dinwoodie teaches the method in which the rules involve one of a number of auction structures, such as: sealed bid auction, first price auction, discriminatory auction (Vickrey auction), uniform price auction, open bid auction, English auction, Dutch auction, all-pay auction, or common value auction in the context of the associated claims on which claim 21 is dependent.

The same argument as is made above for claim 4 is applicable here – claim 21 is dependent on claim 1 (i.e., the transactional processes are presented in the special context of claim 1, which is not taught by either Alles or Dinwoodie, nor implied by their combination).

[begin Page 9]

As to claim 22, Dinwoodie teaches the method in which the rules involve one of a number of options structures (see col. 4 lines 44-47, Dinwoodie discloses auction data).

I respectfully disagree that Dinwoodie teaches claim 22, or that Dinwoodie teaches the method in which the rules involve one of a number of options structures in the context of the associated claims on which claim 22 is dependent.

The same argument as is made above for claim 4 is applicable here – claim 22 is dependent on claim 1 (i.e., the transactional processes are presented in the special context of claim 1, which is not taught by either Alles or Dinwoodie, nor implied by their combination).

As to claim 23, Dinwoodie teaches the method in which the rules are specific with regard to the time period during which offers may be input, and the inputting of offered terms is during that time period (see col. 5 lines 7-22 Dinwoodie discloses the cycle time during which bids are accepted).

I respectfully disagree that Dinwoodie teaches claim 23, or that Dinwoodie teaches the method in which the rules are specific with regard to the time period during which offers may be input, and the inputting of offered terms is during that time period in the context of the associated claims on which claim 23 is dependent.

The same argument as is made above for claim 4 is applicable here – claim 23 is dependent on claim 1 (i.e., the transactional processes are presented in the special context of claim 1, which is not taught by either Alles or Dinwoodie, nor implied by their combination).

As to claim 24, Dinwoodie teaches the method in which the rules are specific with regard to the time period during which delivery, control, and/or storage would take place, and the outputted control signals correspond to that time period (see col. 5 lines 38-44 Dinwoodie discloses the participant is locked out if a bid is not received after a predetermined time).

I respectfully disagree that Dinwoodie teaches claim 24, or that Dinwoodie teaches the method in which the rules are specific with regard to the time period during which delivery, control, and/or storage would take place, and the outputted control signals correspond to that time period in the context of the associated claims on which claim 24 is dependent.

The same argument as is made above for claim 4 is applicable here – claim 24 is dependent on claim 1 (i.e., the transactional processes are presented in the special context of claim 1, which is not taught by either Alles or Dinwoodie, nor implied by their combination).

As to claim 25, Dinwoodie teaches the method in which the rules involve successive stages each involving one or more of the methods herein described, each method used

either independently or in combination with other methods, where successive stages are begun or ended by rules-based determinations (see col. 6 lines 19-29. Dinwoodie discloses visual acceptance signal with accepted bid).

I respectfully disagree that Dinwoodie teaches claim 25, or that Dinwoodie teaches the method in which the rules involve successive stages each involving one or more of the methods herein described, each method used either independently or in combination with other methods, where successive stages are begun or ended by rules-based determinations in the context of the associated claims on which claim 25 is dependent.

The same argument as is made above for claim 4 is applicable here – claim 25 is dependent on claim 1 (i.e., the transactional processes are presented in the special context of claim 1, which is not taught by either Alles or Dinwoodie, nor implied by their combination).

As to claim 26, Dinwoodie discloses the method in which subscribers, content recipients, viewers, other system users or prospective users provide information to the computer regarding changes in subscription status, election of pay-per-view event options, viewing of a given content segment, or other feedback or interactive message

[begin page 10]

to be used in associated reporting and billing processes (see col. 6 lines 51-60, Dinwoodie discloses the communicating of bids utilizing inputs devices).

I respectfully disagree that Dinwoodie teaches claim 26, or that Dinwoodie discloses the method in which subscribers, content recipients, viewers, other system users or prospective users provide information to the computer regarding changes in subscription status, election of pay-per-view event options, viewing of a given content segment, or other feedback or interactive message to be used in associated reporting and billing processes in the context of the associated claims on which claim 26 is dependent.

The same argument as is made above for claim 4 is applicable here – claim 26 is dependent on claim 1 (i.e., the transactional processes are presented in the special context of claim 1, which is not taught by either Alles or Dinwoodie, nor implied by their combination).

As to claim 27, Dinwoodie teaches the method, in which a graphical user interface is used as the remote client interface for the entity (or entities) seeking to effect content delivery, control, or storage, where the graphical user interface is linked to the computer via the Internet or dedicated or dial-up or virtual data transmission circuits, and where the remote client interface is automated with a software agent acting as a proxy for the remote entity (see col. 6 lines 19-29, Dinwoodie discloses the a visual acceptance signal with accepted bid amount).

I respectfully disagree that Dinwoodie teaches claim 27, or that Dinwoodie teaches the method, in which a graphical user interface is used as the remote client interface for the entity (or entities) seeking to effect content delivery, control, or storage, where the graphical user interface is linked to the computer via the Internet or dedicated or dial-up or virtual data transmission circuits, and where the remote client interface is automated with a software agent acting as a proxy for the remote entity in the context of the associated claims on which claim 27 is dependent.

The same argument as is made above for claim 4 is applicable here – claim 27 is dependent on claim 1 (i.e., the transactional processes are presented in the special context of claim 1, which is not taught by either Alles or Dinwoodie, nor implied by their combination).

As to claim 28, Dinwoodie teaches the method in which a contract is established between parties in advance of enactment of their respective roles for any implementation of said contract establishing the legal basis for the procedures of such an implementation (see col. 6 lines 19-29).

I respectfully disagree that Dinwoodie teaches claim 28, or that Dinwoodie teaches the method in which a contract is established between parties in advance of enactment of their respective roles for any implementation of said contract establishing the legal basis for the procedures of such an implementation in the context of the associated claims on which claim 28 is dependent.

The same argument as is made above for claim 4 is applicable here – claim 28 is dependent on claim 1 (i.e., the transactional processes are presented in the special context of claim 1, which is not taught by either Alles or Dinwoodie, nor implied by their combination).

General Response to Arguments

Applicants arguments have been fully considered but they are not persuasive.

In the remarks applicant argue in substance that:

A) the present invention innovated an architecture that is of an entirely different architecture than the Internet.

[begin Page 11]

B) Alles does not address key aspects of the invention (either the individual use or the conjunctive use) of the following:

- satellite (or other wireless or non-wireless broadcast network) feeding storage
- storage fed by satellites (or fed by other wireless or non wireless broadcast network)
- automatically managing the moving and storing of content on the satellite (or other wireless or non wireless broadcast network) and automatically managing the moving and storing of content on the downstream storage devices

Examiner respectfully disagrees and provides the following explanation.

In response to A) applicant discloses in the specification that the invention is geared towards addressing the deficiencies of the internet (see background of the invention). Moreover, claims 7 and 9 clearly shows the invention is addressing communication over the resource, system resources or the internet. Applicant is required to clarify the claim language involved in this application to clearly identify the present invention

As described earlier in this document in the context of explaining the difference of the present invention and Alles, the advantageous economic and performance features of the topology described in the present invention derives from a particular novel topology involving non-trunk wireless bandwidth alone (or especially non-trunk wireless bandwidth with storage downstream from that bandwidth) – all subject to automated provisioning.

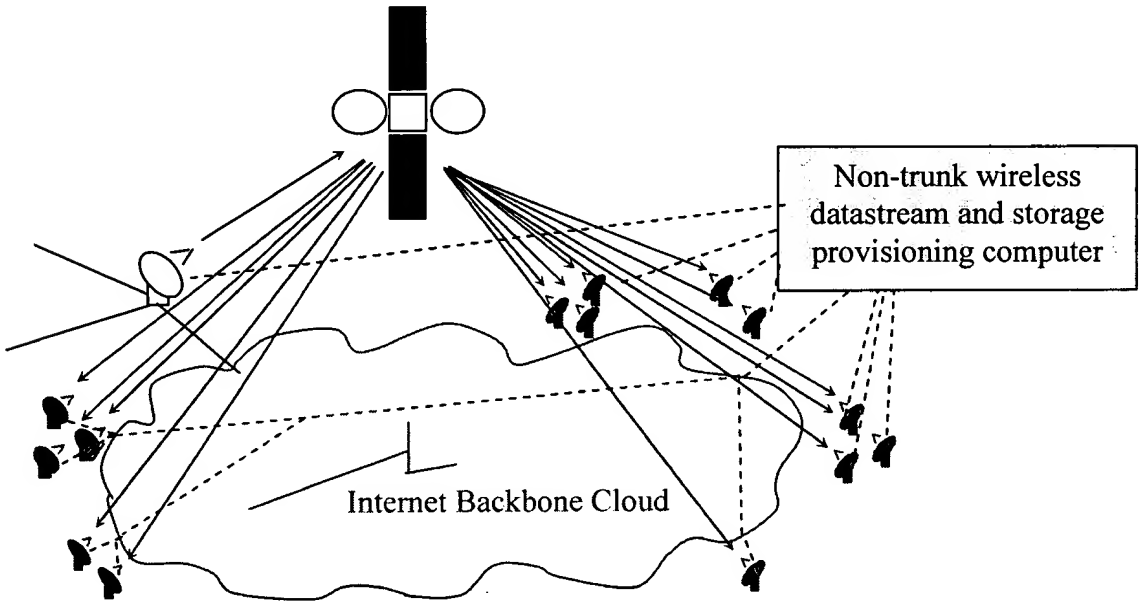
We believe that claim 1 may require revision to exhibit clearer language. We have amended claim 1 to reflect this clarification.

Concerning the following statements by examiner:

> *"In response to A) applicant discloses in the specification that the invention is geared towards addressing the deficiencies of the internet (see background of the invention). Moreover, claims 7 and 9 clearly shows the invention is addressing communication over the resource, system resources or the internet."*

Alles – and most others who aim to address the deficiencies of the Internet – aims to address the deficiencies of the internet by a relatively minor modification or adaptation of the internet. In contrast to this, the present invention would be better characterized as an entirely distinct network from the internet with an entirely different notion of topology and modality – not needing to rely on the internet at all for its operation, but that could leverage the internet for signaling to enable the process described in the present invention. The topology and modality differences arise, as mentioned previously, from the bandwidth-storage role reversal occasioned through provisioning non-trunk wireless bandwidth feeding a great plurality of local storage units (vs. remote storage units feeding a great plurality of network trunk and access bandwidth).

A simple picture of the separation of the present invention from the Internet and the present invention's opportunity to use the Internet for signaling would be as follows. All red-colored elements of the diagram are portions of the Internet. As can be seen, some of the signaling lines can use the Internet (but this is not required, it is merely an option ... not an innovative one, just an economical one reflecting the reality of the situation). Any such use of the Internet is not core to the key innovations of the present invention, but merely acknowledge that the Internet is one of the existing conventional technologies that can be usefully leveraged in the context of the present invention.



The present invention may use the Internet for its point to point trunk paths to ingress content into the system, and for signaling purposes. The vast majority of traffic being disseminative in nature, the vast majority of network traffic between humans, is imagined to eventually transit the architecture of the present invention – vs. transiting the internet.

In response to B), applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies are not recited in the rejected claims(s). Although the claims are interpreted in light of

[begin Page 12]

the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The key features of the present invention I would argue are in the claims, but are perhaps more clearly revealed in the exemplary embodiment described in the patent application. This could mean that some of the claims may need to be narrowed – as in the proposed narrowing of claim 1, below. I would like to speak with you about all these topics, either in person at your offices or via the telephone. After a conversation with you I believe we likely would be much better able to understand the points being made by one another. I would like to then confirm any suggested revisions to the claims, to make them durable.